

**PATENT****REMARKS**

Claims 1-16 are currently pending in this application. Reconsideration is respectfully requested in light of the following remarks.

The Examiner rejected claims 1-7, 11, 13 and 14 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent 6,169,918 to Haefner et al. Applicants respectfully traverse this rejection.

Applicants' claimed invention as recited in claim 1 is directed to a method for emulating a surface electrocardiogram (EKG) of a patient. For example independent claim 1 recites a method comprised in part by adjusting relative amplitudes of portions of a cardiac signal corresponding to atrial signals and portions corresponding to ventricular signals so as to yield an emulated surface EKG. (Underlining added for emphasis only). Applicants respectfully submit that Haefner et al. do not disclose or suggest the recited claim elements.

Rather, Haefner et al. disclose a cardiac rhythm management system with cross-chamber soft blanking to sense electrical heart activity signals associated with a first chamber while reducing unwanted signals associated with a second chamber of the heart. (Haefner et al., Abstract). The soft-blanking of Haefner et al. therefore attempts to minimize the erroneous sensing of a depolarization in a second-chamber as a depolarization in a first-chamber, which could result in a paced pulse being inappropriately withheld from the first chamber when it should have been delivered.

The Examiner points to col. 6, lines 8-40 to suggest that Haefner et al. disclose means for adjusting relative amplitudes of cross chamber signals to yield an emulated surface EKG. What that section actually discloses is an atrial automatic gain control (AGC) circuit that amplifies, filters, and digitizes filtered analog atrial heart activity signals and an atrial detector that detects atrial events indicated by the digitized heart activity signal or from signals received from a processor. For example, the atrial detector of Haefner et al. detects atrial depolarizations by comparing the digitized atrial heart activity signal to a value of an atrial sensing threshold. In one embodiment, the atrial sensing threshold is time-varying to provide soft-blanking to minimize erroneous cross-chamber sensing.

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For example, the system of Haefner et al. increases a time-varying first chamber sensing threshold to a first peak value in response to the detection of a first chamber event. Next, the system of Haefner et al. decreases the first chamber sensing threshold with time from the first peak value toward a first steady-state value. The system of Haefner et al. also increases the first chamber sensing threshold to a second peak value, which is between the first peak and first steady-state values in response to the detection of a second chamber event to minimize the possibility of erroneously sensing the second chamber event in the first chamber as a first chamber event. Next, the system decreases the first chamber sensing threshold with time from the second peak value toward a second steady-state value to increase the detection sensitivity of intrinsic events in the first chamber. (Haefner et al., col. 14, lines 16-30).

Thus, the system of Haefner et al. utilizes time varying sensing thresholds to provide cross-chamber soft blanking to enable accurate sensing of desired electrical signals from an electrode located in or near a first heart chamber while reducing unwanted noise signals originating in or near a second chamber of the heart. (Haefner et al., col. 13, lines 32-36). Haefner et al. do not however, disclose or in anyway suggest adjusting relative amplitudes of portions of a cardiac signal corresponding to atrial signals and the portions corresponding to ventricular signals so as to yield an emulated surface EKG as recited in claim 1 of the present application.

Accordingly, Applicants respectfully submit that claim 1 is novel and unobvious over Haefner et al. and is therefore allowable. Applicants further submit that claims 2-7, 11, 13 and 14 that depend from claim 1 are allowable as is claim 1 and for additional limitations recited therein.

The Examiner rejected claims 5 and 9 under 35 U.S.C. §103(a) as being unpatentable over Haefner et al. Applicants respectfully traverse this rejection. In view of the foregoing analysis of independent claim 1 in view of Haefner et al., Applicants believe that the rejection of dependent claims 5 and 9 under §103 is rendered moot as claims 5 and 9 depend from allowable independent claim 1. Applicants therefore respectfully request that this rejection be withdrawn.

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The Examiner rejected claims 10, 15 and 16 under 35 U.S.C. §103(a) as being unpatentable over Haefner et al. in view of U.S. Patent 6,813,514 to Kroll et al. Applicants traverse this rejection.

Applicants submit that Kroll et al. issued on November 2, 2004 after the filing date (December 12, 2003) of the present application. Applicants therefore submit that Kroll et al. only qualifies as prior art to the subject matter claimed in the present application, if at all, under 35 U.S.C. § 102(e). Applicants further submit that Kroll et al. was filed after November 29, 1999 and is assigned to a common assignee as the present application. Therefore, under 35 U.S.C §103(c), Kroll et al. can not be used as a prior art reference to support a rejection of the pending claims under 35 U.S.C §103(a). Applicants therefore respectfully request that this rejection be withdrawn.

In light of the above remarks, it is respectfully submitted that the application is in condition for allowance, and an early notice of allowance is requested.

Respectfully submitted,

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Date

  
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